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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,777	04/14/2004	Aleksey Yurievich Kolesnychenko	081468-0309196	4703

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EXAMINER

MATHEWS, ALAN A

ART UNIT

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2851

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/823,777

Applicant(s)

KOLESNYCHENKO ET AL.

Examiner

ALAN A. MATHEWS

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4-21-08.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) 6, 13, 14, 26, 31 and 33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-9, 12, 15-23, 25, 27-30, 32 and 34-36 is/are rejected.
- 7) ☒ Claim(s) 10, 11 and 24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsman's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-4, 7-9, 12, 15-23, 25, 27-30, 32, and 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Novak (U. S. Patent Application Publication No. 2006/0023181 A1) in view of either the Japanese patent document JP 10-303114 (cited in one of Applicant's IDSs) or the Japanese patent document JP 10-340846 (cited in one of Applicant's IDSs) or the PCT Publication W0 99/49504 (cited in one of Applicant's IDSs, with a better English translation provided in this office action). Novak '181 discloses in figure 1 a lithographic apparatus 10 having an illumination system 14, a support structure 18 to hold patterning device 28, a substrate table 20 to hold substrate 30, and a projection system 16. Figure 2A and paragraph # 0044 discloses a liquid supply system 252 (including nozzles 258) to supply a liquid to a localized area of the substrate 30. Figure 2A and Figure 2B and paragraph # 0044 discloses a second recovery system 256 which comprises a barrier to collect liquid. Figure 2A and Figure 2B and paragraphs # 0068 - # 0072 disclose that the barrier comprises a groove

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(channel) 287 including a sloped region 282 and a collection region 284. With respect to claims 3 and 29, paragraph # 0080 discloses the use of a hydrophilic (liquidphillic) coating. With respect to claim 7, paragraph # 0076 discloses a second recovery device 286 which includes a low pressure source that creates a low pressure in the collection region 284. The second recovery device 286 can include multiple pumps, multiple reservoirs, valves, or other components. With respect to claim 9, the second recovery device 286 is separate from immersion fluid source 260. With respect to claim 15, the groove 287 could be considered a drainage ditch. With respect to claims 16 and 17, paragraph # 0072 discloses that the sloped region 282 is generally annular shaped, which means that the barrier extends substantially around an outer edge or portion of the substrate table. Also, paragraph # 0071 discloses that the top surface of boundary region 280 is annular shaped. With respect to claims 18 and 36, the groove (boundary) surrounds the closure 254 configured to seal the liquid supply system. It is noted that claims 18 and 36 recite the alternative expression "and/or". Only one of the limitations is required to be shown when reciting an alternative expression. Thus, Novak '181 discloses the invention except for disclosing a projection which projects out above an upper surface of the substrate table. The Japanese patent document JP 10-303114 discloses in figure 4 a projection LB which projects out above the upper surface of the substrate table WH to help contain immersion liquid. The Japanese patent document JP 10-303114 also discloses a projection or raised portion forming the top of element 50A which is next to slot 51 (drain) in figure 4. The Japanese patent document discloses in figure 3 a projection just to the left of exhaust pipe L (drain) which projects

out above the upper surface of the substrate table. W0 99/49504 discloses in the English translation (provided in this office action) on page 23, lines 21-24, providing a dividing wall that encloses the wafer, so that liquid does not overflow from the Z stage, and further providing a pipe for recovering liquid. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide Novak '181 with a projection which projects out above an upper surface of the substrate table in view of either the Japanese patent document JP 10-340846 or the Japanese patent document JP 10-340846 or the PCT Publication W0 99/49504 for the purpose of better confining the liquid so that liquid does not spill out to places that the liquid is not suppose to go and thus damage other lithographic equipment. With respect to Applicant's arguments, the Examiner agrees with Applicant that Novak'181, alone, does not anticipate the amended claims.

2. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Novak (U. S. Patent Application Publication No. 2006/0023181 A1) in view of the Japanese patent document JP 10-303114 as applied to claim 4 above, and further in view of either Saten et al. (U. S. Patent Application Publication No. 2002/0020821 A1, cited in one of Applicant's IDSs) or Novak et al.'182 (U. S. Patent Application Publication No. 2006/0023182, cited in one of Applicant's IDSs) or Loft et al. (U.S. Patent 6,952,253, cited in one of Applicant's IDSs). The modified device of Novak '181 and the Japanese patent document JP 10-303114 discloses the invention except for disclosing that the liquid can be transported along the groove under capillary action. Saten et al. '821

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discloses in paragraphs # 0019 and # 0039 transporting a liquid by capillary liquid forces. Novak et al.'182 discloses in paragraphs # 0007 and # 0063, conveying liquid by capillary action. Lof et al. '253 discloses in column 5, lines 32-38, drawing liquid by capillary forces. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to transport the liquid in the grooves in Novak '181 by capillary forces in view of either Saten et al. '821. or Novak et al.'182 or Lof et al. '253 for the purpose of improving and simplifying the transportation of the liquid.

Allowable Subject Matter

3. Claims 10, 11, and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The reasons for the indicated allowability of the claims are as follows:

The prior art does not disclose or suggest further comprising a surface acoustic wave generator configured to generate surface acoustic waves in the barrier to facilitate transport of the liquid along the barrier in combination with all the other elements recited in independent claim 10.

The prior art does not disclose or suggest the step of generating surface acoustic waves in the barrier to facilitate transport of the liquid along the barrier in combination with all the other elements recited in independent claim 24.

Conclusion

4. Claims 6, 13, 14, 26, 31, and 33 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on October 16, 2007.

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALAN A. MATHEWS whose telephone number is (571)272-2123. The examiner can normally be reached on Monday through Friday from 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached on (571) 272-2399. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Alan A. Mathews/
Primary Examiner
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AM

